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| 10/680,072 | 10/06/2003 | Sridhar Srinivasan | 3382-66954 | 9945 |

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| EXAMINER | |
|---|---|
| ANYIKIRE, CHIKAODILI E | |
| **ART UNIT** | **PAPER NUMBER** |
| 2482 | |
| **NOTIFICATION DATE** | **DELIVERY MODE** |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|---|---|---|---|
| ***Office Action Summary*** | **Application No.**<br>10/680,072 | **Applicant(s)**<br>SRINIVASAN ET AL. | |
| | **Examiner**<br>CHIKAODILI E. ANYIKIRE | **Art Unit**<br>2482 | |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 January 2011*.
2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-10,12,17-23,25,30,39,40,45,47,48,50-62 and 65-68* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-10,12,17-23,25,30,39,40,45,47,48,50-62 and 65-68* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *06 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-10, 12, 17-23, 25, 30, 39, 40, 45, 47, 48, 50-57, 59-62, and 65-68 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1-12, 17-25, 30, 39-40, 48, 53-56, 59-61, and 65-68 rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al (US 2003/0053551) in view of

Tsuchyla et al (US 5,684,602) in view of Punjabi et al (US 2004/0228327, hereafter Punjabi).

As per **claim 1**, Sun et al disclose a computer system, a computer-implemented method ([0040], Ln 1-5) comprising:

receiving video data (Fig 5, 62);

encoding the video data (Fig 5, Encoding section);

parameterizing control information other than the encoded video data, including:

setting a filter type selection that identifies one or more of plural different types of filters for post-processing filtering, wherein the control information other than the encoded video data includes the filter type selection (paragraph [0024] lines 1 – 8 and 11 – 13; the filter type selection would be the deblocking filtering or skipping mode, which meets the claim limitation); and

setting filter information that varies depending on quality or bitrate of the encoded video data, wherein the control information other than the encoded video data further includes the filter information, and wherein the filter information is different than the filter type selection (paragraphs [0024] and [004] lines 5-8; Sun teaches coding parameters as the motion vectors and reference frame information which affects the quality of the image and also meets the claim limitation);

wherein the control information facilitates adjustment by a decoder; the post-processing filtering of the video data after decoding of the encoded video data, the adjustment including;

using the filter type selection to identify the one or more types of filters (paragraph [0024] lines 1 – 8 and 11 – 13; the filter type selection would be the deblocking filtering or skipping mode, which meets the claim limitation); and using the filter information to determine filter operations that are appropriate for the quality or bitrate of the encoded video data, wherein the filter operations are for the identified one ore more types of filters, and wherein, within settings defined by the control information for the post-processing filtering, the decoder can adjust the filter operations depending on processing cycles available to the decoder (paragraph [0024]); and

outputting the encoded video data as well as the control information (Fig 4, 55, [0024], Ln 1-8; the output of the coding parameters unit provides the control information for post-processing).

However, Sun does not explicitly teach adjusting being based at least part in on processing cycles.

In the same field of endeavor, Tsuchlya et al teach adjust being based at least part in on processing cycles (Col 15 Ln 27-32; the CPU does a check of the system is controls the processing based on the system having in the case of Tsuchlya enough space to store memory and therefore the system is adjusted based on the ability to process through each cycle during a decoding process. The examiner respectfully disagrees and is not convinced by the simple changing of cycles to cycle and thinks a review of the claim limitation should be changed to identify the post-processing strength being a determining factor into determining if the present invention is able to post-process a decoded signal for higher image quality).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Sun and further with Tsuchiya. The advantage of Tsuchlya et al provides a maintenance system for controlling multiple operations for a system.

However, Sun or Tsuchiya does not explicitly teach wherein the control information other than the encoded video data.

In the same field of endeavor, Punjabi teaches wherein the control information other than the encoded video data (see Abstract and paragraph [0008]; Punjabi describes a user being able to select a channel that have different settings for encoding).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Sun in view of with Tsuchiya in further view of Punjabi. The advantage of Punjabi is the control of the user to choose the best initial channel for the optimal coding conditions.

As per **claim 2**, Sun the method of claim 1 further comprising: receiving input (Fig 5, 62, paragraph [0025] Ln 3-5) that indicates the control information (Fig 3, 55, paragraph [0024] Ln 2-8).

As per **claim 3**, Sun the method of claim 2 wherein a video encoder receives the input (Fig 5, 62; paragraph [0025] Ln 3-5).

As per **claim 4**, Sun the method of claim 2 wherein an application receives the input and provides the control information to the video encoder (Fig 3, 55 and Fig 5, 62; paragraph [0024] Ln 2-8 and [0025] Ln 3-5).

As per **claim 5**, Sun et al disclose wherein a video encoder (encoding section) specifies the control information depending on one or more criteria, and wherein the one or more criteria include quantization step size and/or quality of the video data (paragraph [0040], Ln 4-8).

As per **claim 6**, Sun et al disclose wherein the post-processing filtering (Fig 5, 94) includes applying a de-blocking filter (Fig 4, 56).

As per **claim 8**, Sun et al disclose wherein the filter information is parameterized as a level for the post-processing filtering (paragraphs [0017] lines 1-6 and [0024]; the prior art uses skip mode filtering as a level system for post-processing filtering and teaches a skip parameter).

As per **claim 9**, Sun et al disclose wherein the filter information is parameterized as a maximum allowed level for the post-processing filtering (paragraphs [0017] lines 1-6 and [0024]; the prior art uses skip mode filtering as a level system for post-processing filtering where the maximum would be filtering).

As per **claim 10**, Sun et al disclose wherein the filter information is parameterized as a minimum allowed level for the post-processing filtering (paragraphs [0017] lines 1-6 and [0024]; the prior art uses skip mode filtering as a level system for post-processing filtering where the option of not filtering at all would be the minimum level).

As per **claim 12**, Sun et al disclose further comprising entropy encoding the control information (Fig 5, 70).

Regarding **claim 17**, arguments analogous to those presented for claim 1 are applicable for claim 17.

Regarding **claim 18**, arguments analogous to those presented for claim 1 are applicable for claim 18.

decoding the encoded video data (Sun, decoding section).

Regarding **claim 19**, arguments analogous to those presented for claim 6 are applicable for claim 19.

Regarding **claim 21**, arguments analogous to those presented for claim 8 are applicable for claim 21.

Regarding **claim 22**, arguments analogous to those presented for claim 9 are applicable for claim 22.

Regarding **claim 23**, arguments analogous to those presented for claim 10 are applicable for claim 23.

Regarding **claim 25**, arguments analogous to those presented for claim 12 are applicable for claim 25.

Regarding **claim 30**, arguments analogous to those presented for claim 18 are applicable for claim 30.

As per **claim 39**, Sun et al disclose wherein the controlling post-processing filtering (Fig 5 element 94) comprises skipping the post-processing filtering (94) for at least some of the video data (Fig 5 element 62, paragraph [0017] lines 1-6).

As per **claim 40**, Sun et al disclose wherein the control information specifies that a video decoder (decoding section) should skip the post-processing filtering (Fig 5 element 94, paragraph [0017], Ln 1-6).

As per **claim 45**, Sun discloses the method of claim 1 wherein the control information further comprises:

information indicating whether or not the post-processing filtering is to be performed after decoding (paragraph [0024]; skip parameter indicating the information); and

for each of plural pictures represented in the video data, if the post-processing filtering is to be performed for the picture, information indicating the filter type selection for the post-processing filtering for the picture (paragraph [0024]; if skipping is not used then Sun teaches applying a deblocking filter).

As per **claim 48**, Sun discloses the method of claim 18, further comprising performing the post-processing filtering (Fig 4 element 56 and Fig 5 element 94; paragraphs [0022]-[0024]).

Regarding **claim 50**, arguments analogous to those presented for claim 45 applicable for claim 50.

Regarding **claim 51**, arguments analogous to those presented for claim 45 are applicable for claim 51.

Regarding **claim 52**, arguments analogous to those presented for claim 45 are applicable for claim 52.

Regarding **claim 53**, arguments analogous to those presented for claim 5 are applicable for claim 53.

Regarding **claim 54**, arguments analogous to those presented for claim 6 and 7 are applicable for claim 54.

Regarding **claim 55**, arguments analogous to those presented for claim 8 are applicable for claim 55.

Regarding **claim 56**, arguments analogous to those presented for claim 9 and 10 are applicable for claim 56.

Regarding **claim 57**, arguments analogous to those presented for claim 45 are applicable for claim 57.

Regarding **claim 59**, arguments analogous to those presented for claim 6 and 7 are applicable for claim 59

Regarding **claim 60**, arguments analogous to those presented for claim 8 are applicable for claim 60.

Regarding **claim 61**, arguments analogous to those presented for claim 9 and 10 are applicable for claim 61.

As per **claim 65**, Sun discloses the method of claim 1 wherein, when the filter information indicates lower quality or bitrate, the filter information tends to enable the post-processing filtering, and wherein, when the filter information indicates higher quality or bitrate, the filter information tends to disable the post-processing filtering (paragraph [0024]; Sun discloses coding parameters based on motion vectors and reference frame information that indicate the quality and the deblocking filter purpose is to enhance only a low quality picture).

Regarding **claim 66**, arguments analogous to those presented for claim 9 and 10 are applicable for claim 66.

Regarding **claim 67**, arguments analogous to those presented for claim 9 and 10 are applicable for claim 67.

Regarding **claim 68**, arguments analogous to those presented for claims 9 and 10 are applicable for claim 68.

2. Claims 47 and 62 rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al (US 2003/0053551) in view of Tsuchiya et al (US 5,684,602) in view of Punjabi et al (US 2004/0228327, hereafter Punjabi) in view of Florencio et al (US 6,125,147).

As per **claim 47**, Sun et al disclose the method of claim 18.

However, Sun et al does not teach wherein determining available processing cycles comprises determining available CPU cycles for applying post-processing filtering.

In the same field of endeavor, Florencio et al teach wherein determining available processing cycles comprises determining available CPU cycles for applying post-processing filtering (Fig 2, 230; Col 7 Ln 9-36).

Therefore, it would have been obvious for one having ordinary skill in the art to modify the invention of Sun et al with the invention of Florencio et al. The advantage is that the propagation of prediction errors is reduced.

Regarding **claim 62**, arguments analogous to those presented for claim 47 are applicable for claim 62.

## ***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is (571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272 - 7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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